

Docket No.: 2360-0419PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Raymond WU

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: September 7, 2004

Art Unit: N/A

For: RADIO RESOURCE ALLOCATION IN A
RADIO COMMUNICATION NETWORK

Examiner: Not Yet Assigned

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34) during prosecution of the above-identified national phase PCT application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: September 7, 2004

Respectfully submitted,

CG/clb

By 
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Attachment(s)

02. Juli 2004

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

10/506783

PCT

Keller & Partner AG

To:

Roshardt, Werner A.
Keller & Partner
Patentanwälte AG
Schmiedensplatz 5/Postfach
CH - 3000 Bern 7
SUISSE

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing
(day/month/year) 30.06.2004

Applicant's or agent's file reference
RS/hj-15250

IMPORTANT NOTIFICATION

International application No.
PCT/CH 02/00148

International filing date (day/month/year)
12.03.2002

Priority date (day/month/year)
12.03.2002

Applicant
ASCOM AG et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:



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PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)



Applicant's or agent's file reference RS/hj-15250	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/CH 02/00148	International filing date (<i>day/month/year</i>) 12.03.2002	Priority date (<i>day/month/year</i>) 12.03.2002
International Patent Classification (IPC) or both national classification and IPC H04Q7/38		
Applicant ASCOM AG et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:
 - I ☒ Basis of the opinion
 - II ☐ Priority
 - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - IV ☐ Lack of unity of invention
 - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - VI ☐ Certain documents cited
 - VII ☐ Certain defects in the international application
 - VIII ☐ Certain observations on the international application

Date of submission of the demand 26.09.2003	Date of completion of this report 30.06.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Delucchi, C Telephone No. +49 89 2399-7305 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/CH 02/00148

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-8, 10-12 as originally filed
9 received on 15.05.2004 with letter of 13.05.2004

Claims, Numbers

1-12 received on 15.05.2004 with letter of 13.05.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/CH 02/00148

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-12
	No: Claims	
Inventive step (IS)	Yes: Claims	1-12
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/CH02/00148

Concerning Item I

Basis of the opinion

1. This preliminary examination report is based on **claims 1-12** filed with letter of 13.05.2004 which have been found to fulfil the requirements of Article 34(2)(b) PCT.
2. Reference is made to the following documents:
D1: EP-A-0 933 955 (TOKYO SHIBAURA ELECTRIC CO) 4 August 1999
D2: US 2001/019954 A1 (SEOL MYOUNG-KI ET AL) 6 September 2001

Concerning Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Having regard to the documents cited in the International Search Report the subject-matter of **claims 1-12** appears to meet the requirements of Article 33(1) PCT in respect of **novelty, inventive step and industrial applicability**.
- 1.1 The closest prior art is found to be document **D1**, which discloses a mobile radio network based on CDMA. The base stations are combined in groups of base stations, where each group of base stations is allocated a plurality of transmissions frequencies, each transmission frequency including a plurality of CDMA transmission channels. In order to average the occupancies of these frequency channels, the channel occupancy of a plurality of frequency channels is monitored using corresponding monitoring means. That is, it is determined how many user connections are established sharing the same transmission frequency.

The network of **D1**, however, does not have the possibility to determine whether a user actually transmits data in an established user connection or not, since the *channel occupancy* of **D1** merely shows how many users occupy a certain channel.

Therefore, departing from **D1**, the problem to be solved by the claimed invention could be formulated as *how to provide the monitoring of an individual user to*

determine whether he exploits the whole transmission capacity that has been assigned to him before or not.

The invention according to **claim 1** defines a **method for allocating radio resources of a radio communication network** to a plurality of users, where a user is allocated a certain transmission capacity, characterized in that a *utilization factor* relating to said transmission capacity is determined and the radio resources are allocated depending on said *utilization factor*, where determining said *utilization factor includes determining how much of said transmission capacity is actually used by said user.*

Since **D1** does not disclose the feature of an *utilization factor* being determined as defined above, the subject-matter of **claim 1** is **novel** over the available prior art as required by Article 33(2) PCT.

The **advantage** of the solution proposed in the present application, is that upcoming allocations of resources can be decided on the basis of the actually usage of already assigned resources, i.e. on the behaviour of the network users, this involving a more efficient resource management and enhancement of data throughput in the network.

Neither **D1** nor the remaining prior art discloses or suggests the determination of an *utilization factor* that includes determining *how much of said transmission capacity allocated to the user is actually used by said user.*

Moreover, the method as defined in **claim 1** is considered to define, for a person skilled in the art, an inventive solution to the above formulated problem, since the described novel method steps are non-obvious when departing from the available prior art and common knowledge in this technical field.

As a consequence, the subject-matter of **claim 1** is considered **inventive** as required by Article 33(3) PCT.

- 1.2 The same reasoning as for **claim 1** also applies to **independent claims 8 and 12**, which respectively defines a **radio communication network** and a **device** for carrying out the **method** according to **claim 1**.

As a consequence, the subject-matter of both **claims 8 and 12** is also considered **novel and inventive** as required by Article 33(2),(3) PCT.

- 1.3 **Claims 2-7 and 9-11** are dependent on **claims 1 and 8** and as such also meet the requirements of the PCT with respect to **novelty and inventive step** (Article 33(2),(3) PCT).
- 1.4 The invention as defined by **claims 1-12** is obviously industrially applicable (Article 33(4) PCT).
2. Notwithstanding the positive opinion on the **novelty, inventive step and industrial applicability** of the present **claims 1-12**, the application does not meet the requirements of Article 6 PCT, because **claims 1, 8 and 12** are not clear.

It is clear from the description, that the main idea of the invention is to monitor whether an individual user actually exploits the whole transmission capacity that has been assigned to him *before* and to amend the allocation practice for *upcoming* allocations depending on the determined exploitation rate in order to enhance the exploitation of the transmission capacity of a mobile radio network. If for example a user requests and is assigned a transmission capacity of 100 kB/s and it is found that the user actually uses only 50 kB/s to transmit his data, the utilization factor is for example determined to be 50%. The next time this user requests a transmission capacity of 100 kB/s he will be assigned for example a transmission capacity of only 70%.

It is considered, however, that the wording of **claims 1, 8 and 12** does not clearly reflect the fact that the *utilization factor*, that includes *determining how much of the already at the moment allocated transmission capacity* to a certain user *is actually used by said user*, is then used by the method to decide about a *certain transmission capacity* for an *upcoming allocation* to the said user.

3. Furthermore, the applicant's attention is drawn to the fact that, according to the requirements of Rule 5.1(a)(ii) PCT, the **relevant background art** disclosed in the cited prior art documents should have been mentioned in the description.